

Desired Output For Project 7

OpenTest1

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** OpenTest1 running *****

Attempting to open a nonexistent file, which should return -1.
Okay.
Attempting to open a file with an overly large name, which should return -1.
Okay.
Attempting to open an existing file, which should succeed.
Okay.

***** Test Complete *****
```

OpenTest2

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** OpenTest2 running *****

Attempting to open the same file 10 times.
Open 0 succeeded
Open 1 succeeded
Open 2 succeeded
Open 3 succeeded
Open 4 succeeded
```

Open 5 succeeded
Open 6 succeeded
Open 7 succeeded
Open 8 succeeded
Open 9 succeeded
Attempting to open the file one more time, which should return -1.
Okay.

***** Test Complete *****

OpenCloseTest

```
===== KPL PROGRAM STARTING =====  
Initializing Thread Scheduler...  
Initializing Process Manager...  
Initializing Thread Manager...  
Initializing Frame Manager...  
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512  
Initializing Disk Driver...  
Initializing Serial Driver...  
Serial handler thread running...  
Initializing File Manager...  
Loading initial program...
```

***** OpenCloseTest running *****

```
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...  
Opening 10 files...  
Closing all 10 files...
```

***** Test Complete *****

CloseTest

```
===== KPL PROGRAM STARTING =====  
Initializing Thread Scheduler...
```

```
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...
```

```
***** CloseTest running *****
```

```
Closing files which are not open and invalid file descriptors; should be nops...
```

```
***** Test Complete *****
```

ReadTest1

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...
```

```
***** ReadTest1 running *****
```

```
Should print '>>>Now is the time for all good m<<<'
>>>Now is the time for all good m<<<
```

```
Should print '>>>en to come to the aid of their<<<'
>>>en to come to the aid of their<<<
```

```
Should print '>>> parties!!!
o the aid of their<<<'
>>> parties!!!
o the aid of their<<<
```

```
Should print '>>> parties!!!
o the aid of their<<<'
>>> parties!!!
o the aid of their<<<
```

```
***** Test Complete *****
```

ReadTest2

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** ReadTest2 running *****

Reading files which are not open and invalid file descriptors...
Okay
Okay
Okay
Okay
Okay
Okay
Reading with negative sizeInBytes...
Okay
Okay

***** Test Complete *****
```

SeekTest

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** SeekTest running *****

Should print 4...
retval = 4
Should print 0...
retval = 0
Should print 72...
retval = 72
Should print -1 (newCurrentPos is > file size)...
retval = -1
Should print -1 (newCurrentPos is < -1)...
retval = -1
Should print -1 (file not open)...
retval = -1
Should print -1 (bad file descriptor)...
```

```
retval = -1
Should print 35...
retval = 35

Should print '>>> come to the aid of their part<<<'
>>> come to the aid of their part<<<

Should print 8...
retval = 8

Should print '>>>he time for all good men to co<<<'
>>>he time for all good men to co<<<

***** Test Complete *****
```

WriteTest1

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called. NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** WriteTest1 running *****

Should print '>>>abcdefghijklmnopqrst<<<'
>>>abcdefghijklmnopqrst<<<
Checking that the file contains "abcdefghijklmnopqrst" at position 0...
Okay.

Should print '>>>abcdePONMLklmZYXWVst<<<'
>>>abcdePONMLklmZYXWVst<<<
Checking that the file contains "abcdePONMLklmZYXWVst" at position 0...
Okay.

***** Test Complete *****
```

WriteTest2

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called. NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
```

```
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** WriteTest2 running *****

Writing files which are not open...
Okay
Okay
Okay
Writing files with invalid file descriptors...
Okay
Okay
Okay
Writing with negative sizeInBytes...
Okay
Okay
Make sure file size is unchanged...
Okay

***** Test Complete *****
```

WriteTest3

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** WriteTest3 running *****

Writing "abcdefghijklmnopqrstuvwxy" to position 0 in file...
Okay
Writing "zyxwvutsrqponmlkjihgfedcba" to position 8179 in file...
Okay
Writing "aaaaabbbbccccddddddeeeef" to position 16371 in file...
Okay
Writing "ggggghhhhiiiiijjjjjkkkkkl" to position 24550 in file...
Okay
Checking that the file contains "abcdefghijklmnopqrstuvwxy" at position 0...
Okay.
Checking that the file contains "zyxwvutsrqponmlkjihgfedcba" at position 8179...
Okay.
Checking that the file contains "aaaaabbbbccccddddddeeeef" at position 16371...
Okay.
Checking that the file contains "ggggghhhhiiiiijjjjjkkkkkl" at position 24550...
Okay.
Writing "AAAABBBBCCCCDDDEEEEFFFGG" to position 16371 in file...
```

Okay
Writing "ABCDEFGHijklmnopqrstuvwxyz" to position 0 in file...
Okay
Writing "HHHHIIIIJJJJKKKKLLLLMMMMNN" to position 24550 in file...
Okay
Writing "ZYXWVUTSRQPONMLKJIHGFEDCBA" to position 8179 in file...
Okay
Checking that the file contains "ABCDEFGHijklmnopqrstuvwxyz" at position 0...
Okay.
Checking that the file contains "ZYXWVUTSRQPONMLKJIHGFEDCBA" at position 8179...
Okay.
Checking that the file contains "AAAABBBBCCCCDDDEEEEEEFFFFGG" at position 16371...
Okay.
Checking that the file contains "HHHHIIIIJJJJKKKKLLLLMMMMNN" at position 24550...
Okay.

***** Test Complete *****

WriteTest4

===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called. NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** WriteTest4 running *****

Writing "abcdefghijklmnopqrstuvwxyz" to position 0 in file...
Okay
Checking that the file contains "abcdefghijklmnopqrstuvwxyz" at position 0...
Okay.
Writing "0123" to current position...
Okay
Writing "ABC" to current position...
Okay
Writing "4567" to current position...
Okay
Writing "DEF" to current position...
Okay
Writing "89" to current position...
Okay
Writing "GHI" to current position...
Okay
Checking that the file contains "abc0123ABC4567DEF89GHIwxyz" at position 0...
Okay.

***** Test Complete *****

WriteTest5

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** WriteTest5 running *****

Writing "abcdefghijklmnopqrstuvwxyz" to position 0 in file...
Okay
Checking that the file contains "abcdefghijklmnopqrstuvwxyz" at position 0...
Okay.
Writing "abcdefghijklmnopqrstuvwxyz" to position 8192 in file...
Okay
Checking that the file contains "abcdefghijklmnopqrstuvwxyz" at position 8192...
Okay.
Make sure that the activity of child 1 and child 2 is interleaved.
.....Child 1 beginning.....
.....Child 2 beginning.....
Writing "B" to position 1 in file...
Okay
Writing "N" to position 8205 in file...
Writing "A" to position 0 in file...
Okay
Writing "D" to position 3 in file...
Okay
Writing "P" to position 8207 in file...
Okay
Writing "M" to position 8204 in file...
Okay
Writing "F" to position 5 in file...
Okay
Okay
Writing "R" to position 8209 in file...
Writing "C" to position 2 in file...
Okay
Writing "T" to position 8211 in file...
Okay
Writing "O" to position 8206 in file...
Okay
Okay
Writing "V" to position 8213 in file...
Writing "E" to position 4 in file...
Okay
Writing "H" to position 7 in file...
Okay
Okay
Writing "J" to position 9 in file...
```



```

Writing "Q" to position 8208 in file...
Okay
Writing "G" to position 6 in file...
Okay
Okay
Writing "L" to position 11 in file...
Writing "I" to position 8 in file...
Okay
Writing "X" to position 8215 in file...
Okay
Writing "K" to position 10 in file...
Okay
.....Child 2 ending.....
Okay
Writing "S" to position 8210 in file...
Okay
Writing "U" to position 8212 in file...
Okay
Writing "W" to position 8214 in file...
Okay
.....Child 1 ending.....
Checking that the file contains "ABCDEFGHijklmnopqrstuvwxyz" at position 0...
Okay.
Checking that the file contains "abcdefghijklmnopqrstuVWXYZ" at position 8192...
Okay.

***** Test Complete *****

```

ReadTest3

```

===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...

***** ReadTest3 running *****

Should print 9 lines with the characters 'Now is th'.
Each line should contain only one character.
N-----
-o-----
--w-----
---- ----
----i----
-----s---
----- --
-----t-
-----h
Should print 9 lines with the characters 'e time fo'.

```

Each line should contain only one character.

```
e-----  
- -----  
--t-----  
---i-----  
----m-----  
-----e-----  
----- --  
-----f-----  
-----o
```

Should print 9 lines with the characters 'r all goo'.
Each line should contain only one character.

```
r-----  
- -----  
--a-----  
---l-----  
----l-----  
----- --  
-----g-----  
-----o-----  
-----o
```

***** Test Complete *****

ReadTest4

```
===== KPL PROGRAM STARTING =====  
Initializing Thread Scheduler...  
Initializing Process Manager...  
Initializing Thread Manager...  
Initializing Frame Manager...  
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512  
Initializing Disk Driver...  
Initializing Serial Driver...  
Serial handler thread running...  
Initializing File Manager...  
Loading initial program...
```

***** ReadTest4 running *****

```
Okay.  
Okay.  
Okay.  
Okay.  
Okay.  
Okay.  
Okay.  
Okay.  
Okay.  
Okay.  
Okay.  
Okay.
```

***** Test Complete *****

WriteTest6

```
===== KPL PROGRAM STARTING =====  
Initializing Thread Scheduler...  
Initializing Process Manager...  
Initializing Thread Manager...  
Initializing Frame Manager...  
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512  
Initializing Disk Driver...  
Initializing Serial Driver...  
Serial handler thread running...  
Initializing File Manager...  
Loading initial program...
```

```
***** WriteTest6 running *****
```

```
Initializing data array to ABCDEFGHIJKLMNOPQRSTUVWXYZ...  
Writing 10000 bytes to pos 0...  
Initializing data array to abcdefghijklmnopqrstuvwxyz...  
Writing 10000 bytes to pos 10000...  
Checking that the file contains "ABCDEFGHIJKLMNOPQRSTUVWXYZ" at position 0...  
Okay.  
Checking that the file contains  
"ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOpqrstuvwxyz" at position  
9958...  
Okay.  
Checking that the file contains "abcdefghijklmnopqrstuvwxyzabcdefghijklmnop" at  
position 19958...  
Okay.  
Checking that the file contains "ABCDEFGHIJKLMNOPQRSTUVWXYZ" at position 3900...  
Okay.  
Checking that the file contains "abcdefghijklmnopqrstuvwxyz" at position 13900...  
Okay.  
Initializing data array to ABCDEFGHIJKLMNOPQRSTUVWXYZ...  
Checking 10000 bytes at pos 0...  
Initializing data array to abcdefghijklmnopqrstuvwxyz...  
Checking 10000 bytes at pos 10000...  
Initializing data array to ZYXWVUTSRQPONMLKJIHGFEDCBA...  
Writing 10000 bytes to pos 0...  
Initializing data array to zyxwvutsrqponmlkjihgfedcba...  
Writing 10000 bytes to pos 10000...  
Checking that the file contains "ZYXWVUTSRQPONMLKJIHGFEDCBA" at position 0...  
Okay.  
Checking that the file contains  
"ZYXWVUTSRQPONMLKJIHGFEDCBAZYXWVUTSRQPONMLKzyxwvutsrqponmlkjihgfedcba" at position  
9958...  
Okay.  
Checking that the file contains "zyxwvutsrqponmlkjihgfedcbazyxwvutsrqponmlk" at  
position 19958...  
Okay.  
Checking that the file contains "ZYXWVUTSRQPONMLKJIHGFEDCBA" at position 3900...  
Okay.  
Checking that the file contains "zyxwvutsrqponmlkjihgfedcba" at position 13900...  
Okay.  
Initializing data array to ZYXWVUTSRQPONMLKJIHGFEDCBA...  
Checking 10000 bytes at pos 0...
```

Initializing data array to zyxwvutsrqponmlkjihgfedcba...
Checking 10000 bytes at pos 10000...

***** Test Complete *****

OpenTest3

```
===== KPL PROGRAM STARTING =====  
Initializing Thread Scheduler...  
Initializing Process Manager...  
Initializing Thread Manager...  
Initializing Frame Manager...  
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512  
Initializing Disk Driver...  
Initializing Serial Driver...  
Serial handler thread running...  
Initializing File Manager...  
Loading initial program...
```

***** OpenTest3 running *****

Attempting to open an existing file whose name exceeds the maximum.
Okay.
Okay.
Attempting to open an existing file using a string which crosses a page boundary.
Okay.

***** Test Complete *****

ExecTest1

```
===== KPL PROGRAM STARTING =====  
Initializing Thread Scheduler...  
Initializing Process Manager...  
Initializing Thread Manager...  
Initializing Frame Manager...  
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512  
Initializing Disk Driver...  
Initializing Serial Driver...  
Serial handler thread running...  
Initializing File Manager...  
Loading initial program...
```

***** ExecTest1 running *****

Should print 'Hello, world'...
Hello, World!!!

***** Test Complete *****

ExecTest2

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...
```

```
***** ExecTest2 running *****
```

```
Attempting to exec an existing file whose name exceeds the maximum.
Okay.
Attempting to exec an existing file which is not an executable.
LoadExecutable: Bad magic number
Okay.
Attempting to open an existing file using a string which crosses a page boundary.
Should print 'Hello, world'...
Hello, World!!!
```

```
***** Test Complete *****
```

ExecTest3

```
===== KPL PROGRAM STARTING =====
Initializing Thread Scheduler...
Initializing Process Manager...
Initializing Thread Manager...
Initializing Frame Manager...
AllocateRandomFrames called.  NUMBER_OF_PHYSICAL_PAGE_FRAMES = 512
Initializing Disk Driver...
Initializing Serial Driver...
Serial handler thread running...
Initializing File Manager...
Loading initial program...
```

```
***** ExecTest3 running *****
```

```
Should print 'Hello, world' 20 times...
Hello, world      1
Hello, world      2
Hello, world      3
Hello, world      4
Hello, world      5
Hello, world      6
Hello, world      7
Hello, world      8
Hello, world      9
Hello, world     10
Hello, world     11
Hello, world     12
Hello, world     13
```

Hello, world 14
Hello, world 15
Hello, world 16
Hello, world 17
Hello, world 18
Hello, world 19
Hello, world 20

***** Test Complete *****
